

WHAT IS CLAIMED IS:

1. A method of transparently transporting frame information across a network, comprising:

placing payload information from a first frame into payload locations of a second frame, the first frame associated with a first network having a first protocol, the second frame associated with a second network having a second protocol;

placing overhead information from the first frame into payload locations of a payload for the second frame.

2. The method of Claim 1, wherein the payload information of the first frame is mapped exactly into corresponding payload locations of the second frame.

3. The method of Claim 1, wherein the overhead information of the first frame is placed into fixed stuff locations of the payload of the second frame.

4. The method of Claim 1, wherein overhead bytes that are identical between the first network and the second network are not placed into the second frame.

5. The method of Claim 1, wherein redundant overhead bytes are discarded.

6. The method of Claim 1, wherein path overhead locations of the second frame include overhead information of the first frame.

7. The method of Claim 1, further comprising:  
sending the second frame across the second network.

5        8. The method of Claim 7, further comprising:  
receiving the second frame at a departure node of  
the second network;  
extracting payload information for the second frame  
from the second frame;  
extracting overhead information for the first frame;  
10        reconstructing the first frame in the departure node  
from the extracted payload and overhead information.

15        9. The method of Claim 8, further comprising:  
transferring the first frame to a third network, the  
third network having the first protocol

10. The method of Claim 9, wherein the third  
network is a remote location of the first network.

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11. A network for transparently transporting frame information, comprising:

5 a node operable to receive frame information in a first frame structure, the first frame structure including a header portion and a payload portion, the node operable to place the payload portion of the first frame structure into a payload portion of a second frame structure, the node operable to place the header portion of the first frame structure into the payload portion of  
10 the second frame structure.

12. The network of Claim 11, wherein the node is operable to place the header portion of the first frame structure in fixed stuff bit locations of the payload of  
15 the second frame structure.

13. The network of Claim 11, wherein the node is operable to concatenate path overhead bytes of the payload portion of the first frame structure for  
20 placement into path overhead locations of the payload of the second frame structure.

14. The network of Claim 11, wherein the node is operable to discard redundant overhead bytes of the  
25 header portion of the first frame structure..

15. The network of Claim 11, wherein the node is operable to place an entire header and payload portions of the first frame structure into the payload portion of  
30 the second frame structure.

16. A method of transparently transporting frame information across a network, comprising:

receiving a first STS-3 telecommunications signal carrying three STS-1 telecommunications signals, the  
5 three STS-1 telecommunications signals each including header and payload information byte interleaved into a first frame structure for the first STS-3 telecommunications signal, the first frame structure having a header portion with byte interleaved header  
10 information of the three STS-1 telecommunications signals, the first frame structure having a payload portion with byte interleaved header information of the three STS-1 telecommunications signals, the payload portion of the first frame structure including fixed  
15 stuff byte locations, the payload portion of the first frame structure including path overhead locations;

placing the payload portion of the first frame structure into payload locations of a second frame structure for a second STS-3 telecommunications signal,  
20 the path overhead locations of the payload portion of the first frame structure being placed into path overhead locations of the second frame structure;

placing the header portion of the first frame structure into payload locations of the second frame structure, the header portion of the first frame  
25 structure being placed into fixed stuff bytes of the second frame structure.

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17. The method of Claim 16, wherein path overhead locations of the second frame structure includes path overhead for the second STS-3 telecommunications signal, path overhead for the first STS-3 telecommunications signal, and overhead bytes from the header portion of the first frame structure.

18. The method of Claim 16, further comprising:  
discarding overhead bytes of the header portion of the first frame structure that are redundant between the three STS-1 telecommunications signals and that are identical with overhead bytes for the second STS-3 telecommunications signal.

19. The method of Claim 16, wherein the fixed stuff byte locations are in columns 30 and 59 of the second frame structure.

20. The method of Claim 16, further comprising:  
concatenating path overhead for the three STS-1 telecommunications signals into a single path overhead representing all three STS-1 telecommunications signals.